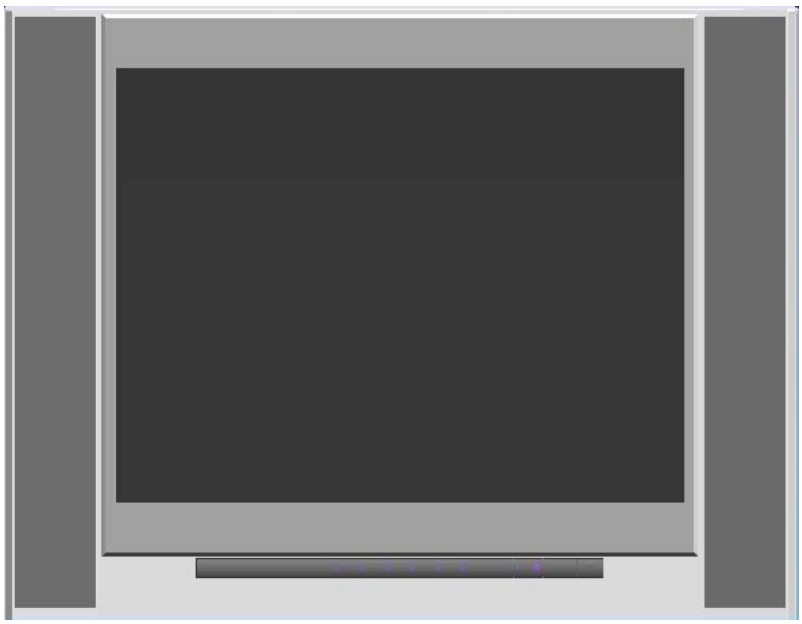
# Daewoo Electronics
# SERVICE MANUAL
# T008



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# 1. SAFETY PRECAUTIONS

1. The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. Electrical components having such features are identified by shading on the schematics and by ( ! ) on the parts list in Service manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may cause shock, fire, or other hazards
4. Don't short between the LIVE side ground and ISOLATED (NEUTRAL) side ground or EARTH side ground when repairing. Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE: ( ⏦ ) side GND, ISOLATED (NEUTRAL) : ( ⊥ ) side GND and EARTH : ( ⏚ ) side GND. Don't short between the LIVE side GND and ISOLATED (NEUTRAL) side GND or EARTH side GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and ISOLATED (NEUTRAL) side GND or EARTH side GND at the same time. If above note will not be kept, a fuse or any parts will be broken.
5. If any repair has been made to the chassis, it is recommended that the B1 setting should be checked or adjusted (See ADJUSTMENT OF B1 POWER SUPPLY).
6. The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approved by the manufacturer of the complete product.
7. Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10kΩ 2W resitor to the anode button.
8. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the
9. manufacturer's replacement components.
10. Isolation Check
    (Safety for Electrical Shock Hazard)
    After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screwheads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.
11. The surface of the TV screen is coated with a thin film which can easily be damaged. Be very careful with it when handle the TV. Should the TV screen become soiled, wipe it with a soft dry cloth. Never rub it forcefully. Never use any cleaner or detergent on it.

(1) Dielectric Strength Test

The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 3000V AC (r.m.s.) for a period of one second.

(…Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a periode of one second.)

This method of test requires a test equipment not generally found in the service trade.

(2) Leakage Current Check

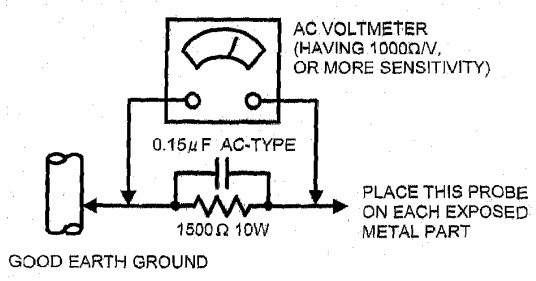
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).

However, in tropical area, this must not exceed 0.2mA AC (r.m.s.).

● Alternate Check Method

Plug the AC line cord directly into the AC outlet ( do not use a line isolation transformer during this check.). Use an AC voltmeter having 1000 ohms per volt or more sensitivity in the following manner. Connect a 1500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).

However, in tropical area, this must not exceed 0.3V AC (r.m.s.). This corresponds to 0.2mA AC (r.m.s.)

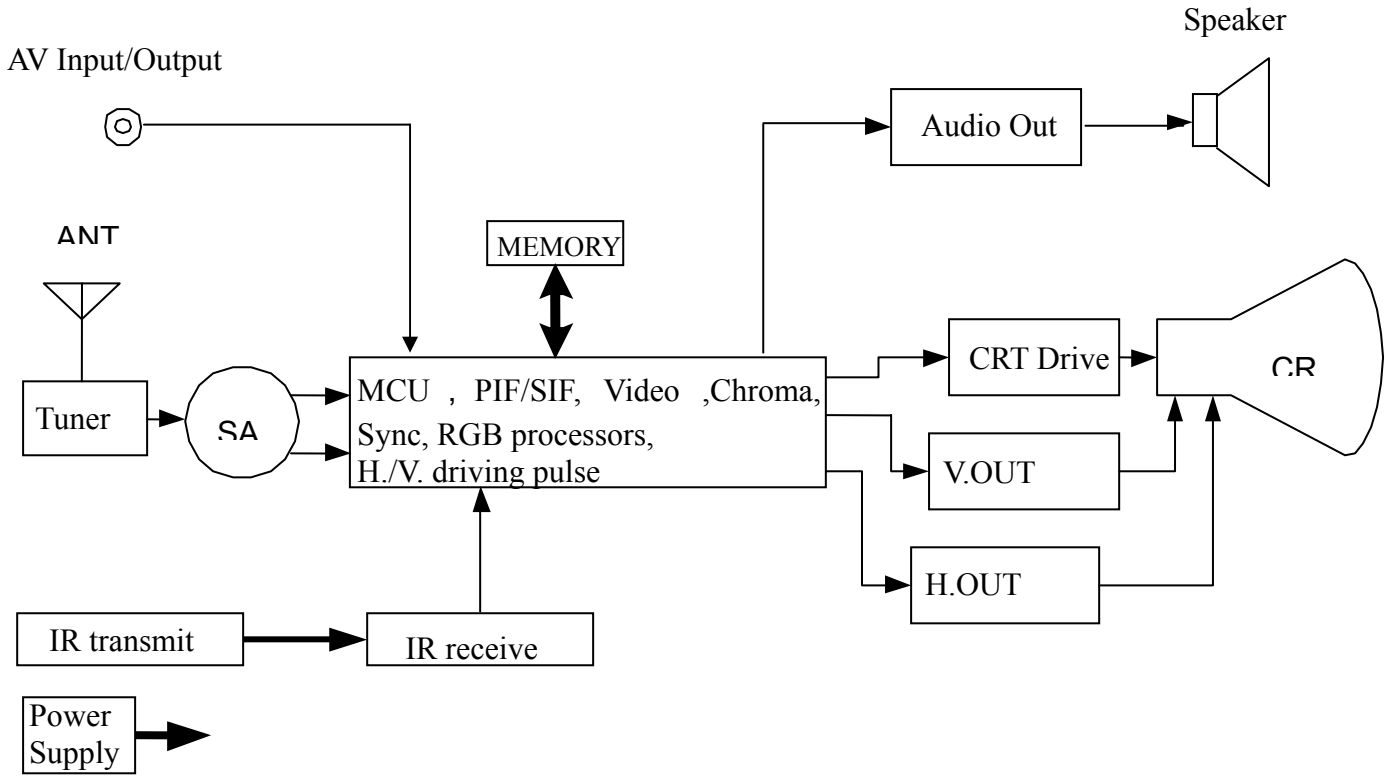


# 2.MCU and signal processor for a PAL/NTSC TV

The TMP8893CPNG-6RE1 is an integrated circuit for a PAL/NTSC TV. A MCU and a TV signal processor are integrated in a 64-pin shrink DIP package. The MCU contains 8-bit CPU, ROM, RAM, I/O ports, timer/counters, A/D converters, an on-screen display controller, remote control interfaces, IIC bus interfaces and the Closed Caption decoder. The TV signal processor contains PIF, SIF, Video, multi-standard chroma, Sync, RGB processors.

- A8893CPNG-6RE1 MCU+OSD+CCD+ TV Processor controller with Software inside.
- 24C08 Non Volatile memory(EEPROM)
- STV9302B Vertical deflection system output circuit.
- TDA7263 Audio Output
- SC6122 Remote Controlled Transmitter.

TOSHIBA G8 chassis color TV block diagram



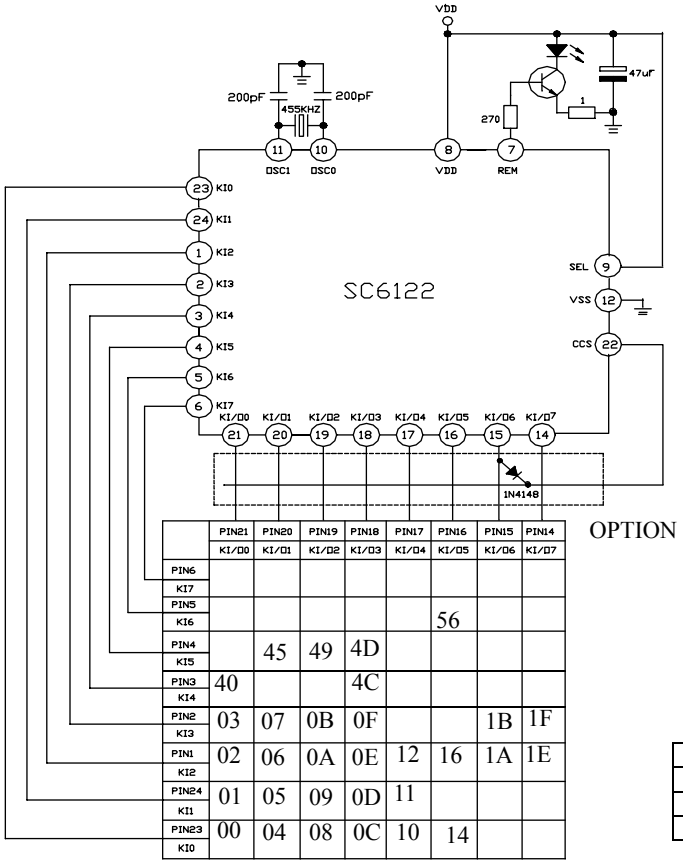
# 3. Definition of A8891CPNG-6RE1 Pin

| NO. | Pin name | I/O | Function |
|---|---|---|---|
| 1 | EyeCare or X-ray | I/O | EyeCare or X-ray |
| 2 | Thermal resistance（FS） | Out | Thermal resistance |
| 3 | KEY | I/O | Key input |
| 4 | VSS | - | GND connection |
| 5 | RESET | I/O | Reset signal input |
| 6 | XOUT | In | 8 MHz oscillator connecting |
| 7 | XIN | Out | 8 MHz oscillator connecting |
| 8 | TEST | In | GND connection |
| 9 | VDD | - | 5V power supply |
| 10 | VSS | - | GND connection |
| 11 | TV DEF AGND | - | GND yerminal for TV DEF block |
| 12 | FBP in | In | Input terminal for FBP |
| 13 | H out | Out | Output terminal for Horizontal driving pulse |
| 14 | HAFC 1 | - | Terminal to be connected capacitor for H AFC filter |
| 15 | V saw | - | Terminal to be connected capacitor to generate Vsaw signal |
| 16 | V out | Out | Output terminal for Vertical driving pulse |
| 17 | AVcc(8V) | - | Vcc terminal for DEF,RGB,Audio out and PIF out circuit |
| 18 | TV A GND | - | GND terminal for TV block |
| 19 | Cb in | In | Input terminal for Cb signal |
| 20 | Y in | In | Input terminal for Y signal |
| 21 | Cr in | In | Input terminal for Cr signal |
| 22 | Ext AU1 in | In | Input terminal for Audio1 signal 1 |
| 23 | C/V3 in | In | Input terminal for Chroma or Video signal |
| 24 | V2 in | In | Input terminal for Video signal |
| 25 | ALC Filter | In | Terminal to be connected capacitor for ALC(Audio Level Control) |
| 26 | V1 in | In | Input terminal for Video signal.(Input leave = 1 Vp-p) |
| 27 | ABCL | In | Input terminal for ABL/ACL control |
| 28 | AU out1 | Out | Output terminal 1 for Audio signal |
| 29 | AU out2 | Out | Output terminal 2 for Audio signal |
| 30 | TV out/FM radio | Out | Output terminal for detected PIF signal or FM radio |
| 31 | SIF out | Out | Output terminal for 1bit DAC, detected SIF signal or audio monitor out 2. |
| 32 | Ext AU2 in | In | Input terminal for External Audio signal 1 |
| 33 | H correct/SIF in | In | Input terminal for H correction and 2nd SIF |
| 34 | DC NF | Out | Terminal to be connected capacitor for DC Negative Feedback from SIF Det output |
| 35 | PIF PLL | - | Terminal to be connected with loop filter for PIF PLL.This terminal voltage is controlled PIF VCO frequency. |
| 36 | IF Vcc 5V | - | Vcc terminal for IF circuit. Supply 5V. |
| 37 | Reg Fil | - | Terminal to be connected capacitor for stabilizing internal bias. |
| 38 | AU monitor out1 | | Output terminal for External Audio signal or TV audio signal selected by BUS(Audio SW) |
| 39 | IF AGC | - | Terminal to be connected with IF AGC filter. |
| 40 | IF GND | - | GND terminal for IF circuit. |
| 41 | IF in | In | Input terminals for IF signals. |
| 42 | IF in | In | Input terminals for IF signals. |
| 43 | RF AGC | | Output terminal for RF AGC control level. |
| 44 | Black Det | - | Terminal to be connected with Black Det filter for black stretch. |
| 45 | SVM/Monitor | | Output terminal for monitor function. Also output terminal for SVM signal selectable through IIC bus. |
| 46 | APC Filter | | Terminal to be connected with APC filter for chroma demodulation. |
| 47 | YC Vcc 5V | | Vcc terminal for Y/C circuit |
| 48 | H/L out | | Output terminal for High or Low. |
| 49 | DVCC | | Vcc terminal for digital block |
| 50 | R out | Out | Output terminal for R signal. |
| 51 | G out | Out | Output terminal for G signal. |

| | | | |
|---|---|---|---|
| 52 | B out | Out | Output terminal for B signal. |
| 53 | TV DGND | - | GND terminal for digital block. |
| 54 | up AGND | - | GND for Oscillator circuit |
| 55 | up AVDD | - | Vdd for Oscillator circuit Supply 5V |
| 56 | VIDEO1/2 | Out | TV=0,AV1=OPEN，AV2=5V |
| 57 | SDA1 | I/O | IIC-BUS SDA1 |
| 58 | SCL1 | I/O | IIC-BUS SCL1 |
| 59 | 50/60Hz control | I/O | 50/60Hz |
| 60 | PWM | I/O | PWM |
| 61 | MUTE | I/O | MUTE |
| 62 | H.SYNC | I/O | Horizontal sync signal input |
| 63 | REMOTE | I/O | Remote controller signal input |
| 64 | POWER | I/O | Power control & Check, On=Hi-Z(input),Off=L(output) |

# 4. Remote Control Circuit Diagram and Function

## A.User Remote




OPTION

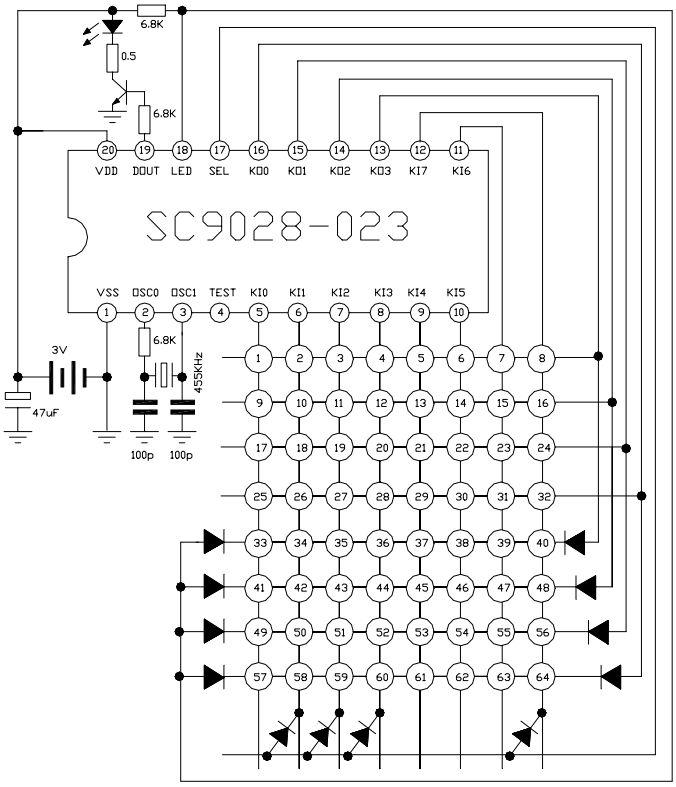
| | PIN21 KI/O0 | PIN20 KI/O1 | PIN19 KI/O2 | PIN18 KI/O3 | PIN17 KI/O4 | PIN16 KI/O5 | PIN15 KI/O6 | PIN14 KI/O7 |
|---|---|---|---|---|---|---|---|---|
| PIN6 KI7 | | | | | | | | |
| PIN5 KI6 | | | | | | 56 | | |
| PIN4 KI5 | | 45 | 49 | 4D | | | | |
| PIN3 KI4 | 40 | | | 4C | | | | |
| PIN2 KI3 | 03 | 07 | 0B | 0F | | | 1B | 1F |
| PIN1 KI2 | 02 | 06 | 0A | 0E | 12 | 16 | 1A | 1E |
| PIN24 KI1 | 01 | 05 | 09 | 0D | 11 | | | |
| PIN23 KI0 | 00 | 04 | 08 | 0C | 10 | 14 | | |

| | User Remote |
|---|---|
| CUSL | 40 |
| CUSH | BF |
| Diode | Pin15 |

| NO. | Code | Name | TV Mode |
|---|---|---|---|
| 01 | 00 | 0 | 0 |
| 02 | 01 | 1 | 1 |
| 03 | 02 | 2 | 2 |
| 04 | 03 | 3 | 3 |
| 05 | 04 | 4 | 4 |
| 06 | 05 | 5 | 5 |
| 07 | 06 | 6 | 6 |
| 08 | 07 | 7 | 7 |
| 09 | 08 | 8 | 8 |
| 10 | 09 | 9 | 9 |
| 11 | 0A | CCD | CCD |
| 12 | 0B | -/-- | 1-- |
| 13 | 0C | MENU | Menu switch |
| 14 | 0D | SYS | System |
| 15 | 0E | QV | Quick View |
| 16 | 0F | →\| P\| ← | Video PP |

| | | | |
|---|---|---|---|
| 17 | 10 | MUTE | Mute/unmute |
| 18 | 11 | EyeCare | EyeCare |
| 19 | 12 | POWER | Power on/off |
| 20 | 14 | TV/AV | TV/AV |
| 21 | 16 | DISPLAY | Status Recall |
| 22 | 1A | V+ | Volume +/Menu Item adjust(increase) and confirm |
| 23 | 1B | P+ | Channel +/Menu Item select |
| 24 | 1E | V- | Volume -/Menu Item adjust(decrease) |
| 25 | 1F | P- | Channel -/Menu Item select |
| 26 | 40 | Service | Service in |
| 27 | 45 | SLEEP | Sleep |
| 28 | 49 | CALE | Calendar |
| 29 | 4C | ZOOM | Screen zoom/wide |
| 30 | 4D | MSG | Message |
| 31 | 56 | LOCK | Lock |

# B.Service Remote




| | Service Remote |
|---|---|
| CUSL | 8E |
| CUSH | 8E |
| Diode | Pin6,7,8,12 |

| NO. | Code | Name | TV Mode |
|---|---|---|---|
| 01 | 00 | G-DRV | G DRIVE |
| 02 | 01 | B-DRV | B DRIVE |
| 11 | 0A | MUTE3 | To set the screen into a horizontal line. |
| 12 | 0B | MENU | MENU |
| 13 | 0C | ↑ | ITEM SELECT UP |
| 14 | 0D | ↓ | ITEM SELECT DOWN |
| 15 | 0E | ← | Menu Item adjust(decrease) |
| 16 | 0F | → | Menu Item adjust(increase) |
| 21 | 14 | POWER | Power / Stand-by |
| 24 | 17 | HPOS | 60Hz HORIZONTAL PHASE |
| 25 | 18 | OSD | OSD POSITION ADJUSTMENT |
| 26 | 19 | M-MODE ON | M-MODE ON (factory produce mode) |
| 29 | 1C | VP50 | 50Hz VERTICAL PHASE |

| | | | |
|---|---|---|---|
| 30 | 1D | HIT | 60Hz VERTICAL AMPLITUDE |
| 31 | 1E | HPS | 50Hz HORIZONTAL PHASE |
| 32 | 1F | VP60 | 60Hz VERTICAL PHASE |
| 33 | 20 | RCUT - | R CUT adjust(decrease) |
| 34 | 21 | RCUT + | R CUT adjust(increase) |
| 35 | 22 | GCUT - | G CUT adjust(decrease) |
| 36 | 23 | GCUT + | G CUT adjust(increase) |
| 37 | 24 | BCUT - | B CUT adjust(decrease) |
| 38 | 25 | BCUT + | B CUT adjust(increase) |
| 39 | 26 | HITS | 50Hz VERTICAL AMPLITUDE |
| 40 | 27 | VLIN | 60Hz VERTICAL-LINEARILTY |
| 42 | 29 | Search Down | Manual Search Down |
| 43 | 2A | Search Up | Manual Search Up |
| 44 | 2B | BRTS | Sub Bright |
| 45 | 2C | D-Mode ON/OFF | D-Mode ON/OFF switch |
| 48 | 2F | POS UP | Position Up |
| 49 | 30 | POS DOWN | Position Down |
| 50 | 31 | Shopout | Shop-out |
| 51 | 32 | S-PVOC | LOGO ADDRESS |
| 58 | 39 | BUS OFF | BUS OFF |
| 60 | 3B | VSC | 60Hz VERTICAL-S CORRECTION |
| 61 | 3C | VLIS | 50Hz VERTICAL-LINEARILTY |
| 62 | 3D | AGC | RF-AGC |
| 63 | 3E | TV IC ADJUST | White balance automatic adjustment |

# 5.Service Controlled Function

The Service mode is entered by pressing the “D-MODE ON/OFF” key when the TV is in ON condition,”D” is displayed on the screen.. Press the “POWER” key to exit Service mode.

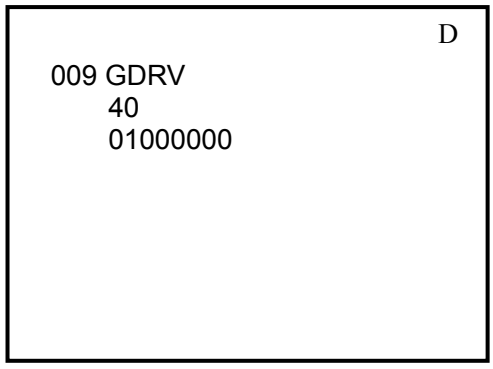
*Note:How to use user remote enter Service mode?*

*Press “MENU”→ “ 6” → “ 4” → “ 8” → “ 3” key*

# (1)White balance adjustment

The items within the White Balance mode can be accessed using “Item up” (↑ )/ “Item down” (↓ ) keys and the selected item value is modified using “Value+” (→ )/ “Value-” (← ) keys. The parameters controlled in the White Balance menu are:

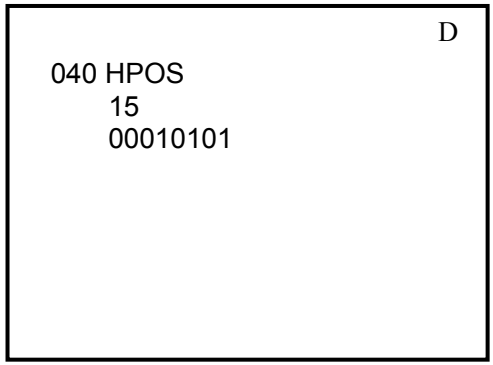
a)Press the ▭ key to set the screen into a horizontal line
b)RCUT + : Red cut-off value increase
c)RCUT - : Red cut-off value decrease
d)GCUT +: Green cut-off value increase
e)GCUT -: Green cut-off value decrease
f)BCUT +: Green cut-off value increase
g)BCUT -: Green cut-off value decrease
h)Press the ▭ key again to return to the normal picture.
i)GDRV -: Green drive
j) → : value increase
k) ← : value decrease
l)BDRV +: Blue drive
m) → : value increase
n) : value decrease




# (2)Picture and AGC service adjustment

1)The items within the Picture mode can be accessed using “Item up” (↑ )/ “Item down” (↓ ) keys and the selected item value is modified using “Value+” (→ )/ “Value-” (← ) keys. The parameters controlled in the Picture menu are:

a) HPOS: 60Hz HORIZONTAL PHASE
b) VPOS: 60Hz VERTICAL PHASE
c) HIT: 60Hz VERTICAL AMPLITUDE
d) HITZ: 60Hz ZOOM VERTICAL AMPLITUDE
e) HITW: 60Hz WIDE VERTICAL AMPLITUDE
f) VLIN: 60Hz VERTICAL-LINEARILTY
g) VSC: 60Hz VERTICAL-S CORRECTION
h) HPS: 50Hz HORIZONTAL PHASE
i) VPS: 50Hz VERTICAL PHASE



j) HITS: 50Hz VERTICAL AMPLITUDE
k) VLIS: 50Hz VERTICAL-LINEARILTY
l) VSS: 50Hz VERTICAL-S CORRECTION
m)AGC:Tuner AGC.

## 2)For Mass Production

The items of the Picture adjust mode can be accessed quickly using below service remote No.2 and No.5.

For example: If you want to adjust Vertical-SIZE ,then you push [V-SIZE] button →push [+] /[-]keys to adjust →push [M-ON] button to exit after you adjust over.

These service remote is common remote, so some function of items is a little difference as below:

**Service R/C No.2:**

50HZ V-LINE: 60Hz VERTICAL-LINEARILTY
50HZ V-SIZE: 60Hz VERTICAL AMPLITUDE
50HZ V-CENT: 60Hz VERTICAL PHASE
V-SADJ: 60Hz VERTICAL-S CORRECTION
50HZ H-CENT: 60Hz HORIZONTAL PHASE

**Service R/C No.5:**

RFAGC: RF AGC.
OSD: OSD position adjust.
BRTC: SUB BRIGHT CENTER
Other three buttons are no used.
:

# (3)Option set

1)OPT

| | Bit | Function | Status “ 0” | Status “ 1” |
|---|---|---|---|---|
| OPT | Bit7 | The algorithm of ASM | ASM doesn't judge IFLOCK with case 4 | ASM judge IF LOCK with case 4 |
| | Bit6 | The algorithm of ASM | ASM doesn't judge AFT area with case 4 | ASM judge AFT area with case 4 |
| | Bit5 | VT Down of AFT when No Signal | no use | use |
| | Bit4 | Fjp_bb_v_freq | C_BB_V_FREQ_313H | C_BB_V_FREQ_312_5H |
| | Bit3 | Fjp_digital_aft | no use | use |
| | Bit2 | V MUTE V-MuteOn/Off when CH changes | Off | On |
| | Bit1 | Fvmute_type During POS change | Y-MUTE | RGB-CUT Off DC |
| | Bit0 | Fjp_menu_background | no use | use |

2)OPT1

| | Bit | Function | Status “ 0” | Status “ 1” |
|---|---|---|---|---|
| OPT1 | Bit7 | Fjp_calendar | no use | use |
| | Bit6 | Fjp_eyecare | no use | use |
| | Bit5 | Fjp_tint | normal | inverse |
| | Bit4 | Fjp_screen | no use | use |
| | Bit3 | Fjp_rf_pwron | AV status memory | only TV while power on |
| | Bit2 | Fjp_ntsc358 | multi color system | only358ntsc |
| | Bit1 | Fjp_uhf | p3 | p2 |
| | Bit0 | Fjp_message | no use | use |

3)OPT2

| | Bit | Function | Status “ 0” | Status “ 1” |
|---|---|---|---|---|
| OPT2 | Bit7 | Fjp_mute_process | no special process | add special process for mute |
| | Bit6 | Fjp_refresh_tuner | no refresh | refresh the registers of FS tuner at the interval of 256ms |
| | Bit5 | Fjp_pwr_delay | nouse | 1S delay power on |
| | Bit4 | Fjp_power_option | stand by status | must use remote control to open TV |
| | Bit3 | Fjp_woofer | no use | use |
| | Bit2 | Fjp_ta1343n | no use | use |
| | Bit1 | Fav_chg_mute | not mute | mute |
| | Bit0 | Fslice_level(use to control the seventh bitof2in1 0x1e register) | 40%( set bit6 of register 0x1e of 2in1 to 0) | 35%(set bit6 of register 0x1e of 2in1 to 1) |

4)OPT3

| | Bit | Function | Status “ 0” | Status “ 1” |
|---|---|---|---|---|
| OPT3 | Bit7 | No use | | |
| | Bit6 | PP mode option | VID mode / Contrast / Brightness / Sharpness / Colour<br>Standard 100 50 50 50<br>Dynamic 80 75 60 50<br>Mild 50 40 30 40<br>Movie 60 40 50 50<br>Nature 75 50 40 45 | EK mode / Contrast / Brightness / Sharpness / Colour<br>Standard 50 50 50 50<br>Dynamic 100 75 60 50<br>Mild 40 50 30 50<br>Movie 100 40 50 50<br>Nature 75 50 40 50 |
| | Bit5 | Fjp_pos_av_option | no use | using local pos key to enter AV while no local TV/AV key |
| | Bit4 | Fjp_mute_exmute | no use | use |
| | Bit3 | Fjp_50_60hz_control | no use | use |
| | Bit2 | Fjp_panel_power | panel power key is permitted while panel lock | panel power key is forbidden while panel lock |
| | Bit1 | Exmute while pos change | exmute output | no exmute |
| | Bit0 | Extend mode attenuation | according to effect1 | -5db |

5)AOPT

| | Bit | Function | Status “ 0” | Status “ 1” |
|---|---|---|---|---|
| AOPT | Bit7-6 | No use | | |
| | Bit5 | Fjp_dvd_output | following AV1 | following AV2(pin56 or pin61) |

| | | | | |
|---|---|---|---|---|
| | Bit4 | Fjp_av_stereo | AV mono | AV stereo |
| | Bit3 | Fjp_fm | no FM | use FM |
| | Bit2 | Fjp_video2 | no VIDEO2 | use VIDEO2 |
| | Bit1 | Fjp_dvd | no DVD | use DVD |
| | Bit0 | Fjp_S-video | no S-video | use S-video |

6)EFF1

| | Bit | Function | Status " 0" | Status " 1" |
|---|---|---|---|---|
| EFF1 | Bit7 | No use | This bit must be zero | |
| | Bit6 | ALS SW for ta1343 | off | on |
| | Bit5-4 | ALS start point | 00:220[mv] 01:380[mv] 10:525[mv] 11:770[mv] | |
| | Bit3 | No use | This bit must be zero | |
| | Bit2 | Input attenuation | 0dB | -5dB |
| | Bit1-0 | No use | | |

7)EFF2

| | Bit | Function | Status " 0" | Status " 1" |
|---|---|---|---|---|
| EFF2 | Bit7 | Bass boost | off | on |
| | Bit6 | No use | This bit must be zero | on |
| | Bit5-4 | Woofer LPF | 00:100[hz] 01:125[hz] 10:170[hz] 11:210[hz] | |
| | Bit3 | No use | | |
| | Bit2-0 | Surround effect level | 000:off<br>001:1<br>…..<br>111:7 | |

8)CCOR

| | Bit | Function | Status " 0" | Status " 1" |
|---|---|---|---|---|
| CCOR | Bit7 | No use | No use | |
| | Bit6 | Italic enable specification register | normal | italic |
| | Bit5-4 | No use | No use | |
| | Bit3-0 | Set menu character's color | 0:BLACK 1:BLUE 2:GREEN 3:CYAN 4:RED 5: MAGENDA 6:YELLOW 7:WHITE 8:BLACK 9: DARK BLUE 10:DARK GREEN and so on | |

9)TCOR

| | Bit | Function | Status " 0" | Status " 1" |
|---|---|---|---|---|
| TCOR | Bit7 | No use | No use | |
| | Bit6 | Italic enable specification register | normal | italic |
| | Bit5 | Underline enable specification register | normal | underline |
| | Bit4 | No use | No use | |
| | Bit3-0 | Set menu top character's color | 0:BLACK 1:BLUE 2:GREEN 3:CYAN 4:RED 5: MAGENDA 6:YELLOW 7:WHITE 8:BLACK 9: DARK BLUE 10:DARK GREEN and so on | |

10)SCOR

| | Bit | Function | Status " 0" | Status " 1" |
|---|---|---|---|---|
| SCOR | Bit7 | No use | No use | |
| | Bit6 | Italic enable specification register | 0:normal 1: italic | |
| | Bit5-4 | No use | No use | |
| | Bit3-0 | Set menu selected character's color | 0:BLACK 1:BLUE 2:GREEN 3:CYAN 4:RED 5: MAGENDA 6:YELLOW 7:WHITE | |

11)ACOR

| | Bit | Function | Status " 0" | Status " 1" |
|---|---|---|---|---|
| ACOR | Bit7 | Transparency enable register for the menu area | not assign half transparency | assign half transparency |
| | Bit6-4 | Color select for the menu area | 0:BLACK 1:BLUE 2:GREEN 3:CYAN 4:RED 5: MAGENDA 6:YELLOW 7:WHITE | |
| | Bit3 | Transparency enable register for the highlight menu area | not assign half transparency | assign half transparency |

| | | | | |
|---|---|---|---|---|
| | Bit2-0 | Color select for the highlight menu area | 0:BLACK 1:BLUE 2:GREEN 3:CYAN 4:RED 5: MAGENDA 6:YELLOW 7:WHITE | |

12)CALB

| | Bit | Function | Status " 0" | Status " 1" |
|---|---|---|---|---|
| CALB | Bit7 | Transparency enable register for calendar area | not assign half transparency | assign half transparency |
| | Bit6-4 | Background color for the calendar area | 0:BLACK 1:BLUE 2:GREEN3:CYAN 4:RED 5: MAGENDA 6:YELLOW 7:WHITE | |
| | Bit3 | Transparency enable register for week area | not assign half transparency | assign half transparency |
| | Bit2-0 | Background color for the week area | 0:BLACK 1:BLUE 2:GREEN3:CYAN 4:RED 5: MAGENDA 6:YELLOW 7:WHITE | |

13)CALC

| | Bit | Function | Status " 0" | Status " 1" |
|---|---|---|---|---|
| CALB | Bit7-3 | No use | | |
| | Bit2-0 | Set the character color of calendar | 0:BLACK 1:BLUE 2:GREEN3:CYAN 4:RED 5: MAGENDA 6:YELLOW 7:WHITE | |

14)LOGO

| | Bit | Function | Status " 0" | Status " 1" |
|---|---|---|---|---|
| LOGO | Bit7 | No use | | |
| | Bit6 | Fjp_logv_plus | up | down |
| | Bit5 | Fjp_logo_size | middle | large |
| | Bit4 | Fjp_logo_tvon | no use | logo display while switching on TV set |
| | Bit3 | Fjp_logo_nosignal | no use | logo display while no signal |
| | Bit2-0 | Set logo color | 000: black 001:blue 010: green 011: cyan 100: red 101: magenda 110: yellow 111: white | |

15)LOGH
adjust the horizontal display position of lo

16)LOGV
adjust the vertical display position of logo

17UVBK

| | Bit | Function | Status " 0" | Status " 1" |
|---|---|---|---|---|
| LOGO | Bit7-4 | U BLK ADJ | 0: -22mV, Input DC 8: 0mV | F: 19mV, 2.75mV/dev |
| | Bit3-0 | V BLK ADJ | 0: -22mV, Input DC 8: 0mV | F: 19mV, 2.75mV/dev |

18) ABCL

| | Bit | Function | Status " 0" | Status " 1" |
|---|---|---|---|---|
| ABCL | Bit7 | Fjp_rf_agc | IF isn't mute while AV | IF mute while AV |
| | Bit6 | Y Peak Limiter | Y peak limiter on,105IRE | Y peak limiter off |
| | Bit5-4 | ACL STATR POINT | 0:0V 01:-0.2V 10:-0.3V 11:-1.0V ACL OFF | |
| | Bit3 | ABL START POINT | 00: 0V 01: -0.2V 10: -0.30V 11: -0.4V | |
| | Bit2 | | | |
| | Bit1 | ABL GAIN | 00: -0.2V 01: -0.35V 10: -0.5V 11: -0.65V | |
| | Bit0 | | | |

19)DCBS

| | Bit | Function | Status " 0" | Status " 1" |
|---|---|---|---|---|
| DCBS | Bit7 | C Trap Q _Y | Low | High |
| | Bit6 | Blanking switch | H,V blanking on | H,V blanking off |
| | Bit5 | No use | | |
| | Bit4 | Black stretch SW | Off | On |
| | Bit3-2 | Y GAMMA | 00:off 01:Y gamma point 78IRE,gain-6db 10:68 IRE 11:58 IRE | |
| | Bit1-0 | Black stretch start point and gain | 00:30IRE,gain high 01:40IRE,gain high 10:50IRE,gain low 11:75IRE,gain low | |

20)CLTM

| | Bit | Function | Status “ 0” | Status “ 1” |
|---|---|---|---|---|
| CLTM | Bit7 | P/N ID | PAL/NTSC killer sensitivity, Normal | LOW |
| | Bit6 | Killer off | Normal | Always killer off |
| | Bit5 | N COMB | Off | Color comb filter for NTSC. On |
| | Bit4-3 | Demodulation Phase | 00:PAL 01:NTSC1 10:NTSC2 11:DVD | |
| | Bit2-0 | Y Delay Time | 000:0ns 001: 40ns 010: 80ns 011: 120ns 100: 160ns 101: 200ns 110: 240ns 111: 280ns | |

21)HAFC

| | Bit | Function | Status “ 0” | Status “ 1” |
|---|---|---|---|---|
| CLTM | Bit7-6 | AFC GAIN (TV mode, weak signal and Nois_Bit4=0) | Data Description Blanking<br>Blanking period Picture period<br>00: 1 1<br>01: 4/3 1/3<br>10: 2 1<br>11: OFF OFF | |
| | Bit5-4 | AFC GAIN (TV mode, strong signal and Nois_Bit4=0) | | |
| | Bit3-2 | AFC GAIN (AV mode) | | |
| | Bit1-0 | AFC GAIN (TV mode, and Nois_Bit4=1) | | |

22)FLG0

| | Bit | Function | Status “ 0” | Status “ 1” |
|---|---|---|---|---|
| FLG0 | Bit7 | vco adjust when position select | enable | disable |
| | Bit6-5 | Select f0 of chroma BPF | 0: BPF (AV) 01: TOF1(F0=5MHZ)RF 10: TOF2(F0=6MHZ)RF 11: TOF3(F0=7MHZ)RF | |
| | Bit4 | BPF-SW | Normal, CVBS signal passes along BPF | By pass, CVBS signal doesn't pass along BPF |
| | Bit3 | Fvcd_spot_killer | off | If BB=1, RGB out is 110 IRE |
| | Bit2 | Nyquist Buzz cancel | Nyquist Buzz cancel | off |
| | Bit1 | No use | | |
| | Bit0 | Over mode | Normal | PIF over modulation switch on |

23)FLG1

| | Bit | Function | Status “ 0” | Status “ 1” |
|---|---|---|---|---|
| FLG1 | Bit7 | OSD ABL | ABCL active for OSD | inactive |
| | Bit6 | No use (don't use it) | | |
| | Bit5-4 | OSD CONTRAST | 00: 95 IRE 01: 60 IRE 10: 70 IRE 11: 80 IRE | |
| | Bit3 | Horizontal side blanking | OFF | On, 92% (FBP BLK off, then internal BLK only) |
| | Bit2 | Fvcd_fm_band | Normal | Wide |
| | Bit1 | V ramp bias | power from Y/C VCC | power from IC |
| | Bit0 | CW SW | Off | On |

24)SVM

| | Bit | Function | Status “ 0” | Status “ 1” |
|---|---|---|---|---|
| SVM | Bit7-5 | No use | | |
| | Bit4 | MON/SVM | Pin45 SVM out | Monitor out |
| | Bit3-2 | SVM delay | 00:off 01:-120ns 10:-100ns 11:-80ns | |
| | Bit1-0 | SVM gain | 00: -7dB 01:-1Db 10:+5dB 11:+11dB | |

25)UCOM

| | Bit | Function | Status “ 0” | Status “ 1” |
|---|---|---|---|---|
| UCOM | Bit7-5 | No use | | |
| | Bit4-3 | C APC DATA | 00: data 1-normal for black &white &NTSC 01: Data 2 10: Data 3 for PAL 11: the same as 10 | |
| | Bit2 | Set chroma APC | disable | enable use Bit 3,4 data |

| | | | |
|---|---|---|---|
| | Bit1-0 | Internal ADC | 00:GND 01: R output 10: B output 11: Monitor RF AGC via ADC |

26)SSM

| | Bit | Function | Status " 0" | Status " 1" |
|---|---|---|---|---|
| SSM | Bit7-6 | No use | | |
| | Bit5-4 | S Trap Frequency response Control HP/LP For M | 00:OFF 01:1dB HPF 10:-3dB LPF 11:-2dB LPF | |
| | Bit3-2 | S Trap Q. for M | 00: Q = 3 01:Q = 5 10:Q = 7 (Recommended) 11:Q = 9 | |
| | Bit1-0 | S Trap Group Delay Control for M | 00:off 01:60ns 10:90ns 11:120ns | |

27)SYNC

| | Bit | Function | Status " 0" | Status " 1" |
|---|---|---|---|---|
| SYNC | Bit7-3 | No use | | |
| | Bit2 | H sync judgement | BUS | TC3 |
| | Bit1 | Fvcd_sync_separation level | 40% | 50% |
| | Bit0 | Sync slice level for weak signal | normal | low |

28)SYNB

| | Bit | Function | Status " 0" | Status " 1" |
|---|---|---|---|---|
| SYNB (Sync detection setting for BB On) | Bit7 | No use | | |
| | Bit6 | Reg.19H bit7 SY-DET-1 for 889x | Select the input IF signal level of Sync Lock detection. 00010: 0dB 00011: 0dB 10010: 0dB 10011: 0dB 10001:-4dB 10000:-8dB weak signal others:Do not use | |
| | Bit5 | Reg.19H bit6 SY-DET-4 for 889x | | |
| | Bit4 | Reg.19H bit5 0 for 889x | | |
| | Bit3 | Reg.21H bit1 SY-DET-2 for 889x | | |
| | Bit2 | Reg.21H bit0 SY-DET-3 for 889x | | |
| | Bit1-0 | Sel sync check mode for BB on | 00:checking H-LOCK-1 flag(bit3 of r0) 01:checking H-LOCK-2 flag(bit4 of r1) 1x:checking VLOCK flag (bit7 of r1) | |

29)SYBF

| | Bit | Function | Status " 0" | Status " 1" |
|---|---|---|---|---|
| SYNB (Sync detection setting for BB Off) | Bit7 | No use | | |
| | Bit6 | Reg.19H bit7 SY-DET-1 for 889x | Select the input IF signal level of Sync Lock detection. 00010: 0dB 00011: 0dB 10010: 0dB 10011: 0dB 10001:-4dB 10000:-8dB weak signal others:Do not use | |
| | Bit5 | Reg.19H bit6 SY-DET-4 for 889x | | |
| | Bit4 | Reg.19H bit5 0 for 889x | | |
| | Bit3 | Reg.21H bit1 SY-DET-2 for 889x | | |
| | Bit2 | Reg.21H bit0 SY-DET-3 for 889x | | |
| | Bit1-0 | Sel sync check mode for BB oFF | 00:checking H-LOCK-1 flag(bit3 of r0) 01:checking H-LOCK-2 flag(bit4 of r1)<br>1x:checking VLOCK flag (bit7 of r1) | |

30)SYSR

| | Bit | Function | Status " 0" | Status " 1" |
|---|---|---|---|---|
| SYNB (Sync detection setting for search/tuning) | Bit7 | No use | | |
| | Bit6 | Reg.19H bit7 SY-DET-1 for 889x | Select the input IF signal level of Sync Lock detection. 00010: 0dB 00011: 0dB 10010: 0dB 10011: 0dB 10001:-4dB 10000:-8dB weak signal others:Do not use | |
| | Bit5 | Reg.19H bit6 SY-DET-4 for 889x | | |
| | Bit4 | Reg.19H bit5 0 for 889x | | |
| | Bit3 | Reg.21H bit1 SY-DET-2 for 889x | | |
| | Bit2 | Reg.21H bit0 SY-DET-3 for 889x | | |
| | Bit1-0 | Sel sync check mode for search/tuning | 00:checking H-LOCK-1 flag(bit3 of r0) 01:checking H-LOCK-2 flag(bit4 of r1)<br>1x:checking VLOCK flag (bit7 of r1) | |

31)VCD0

| | Bit | Function | Status " 0" | Status " 1" |
|---|---|---|---|---|
| VCDO | Bit7-6 | Audio Monitor Out | 00:depend on Audio SW 01:TV 1X:mute | |
| | Bit5-4 | C Trap MD | 00: interlocking video SW 01: as 00 10: not interlocking C-trap off 11: not interlock C-trap on | |
| | Bit3 | Halftone Gain | Main:OSD 30%: 70% | Main:OSD 50%: 50% |
| | Bit2 | U/V Switch | Cb/Cr, Cr input(#21)gain up,+3Db | U/V |
| | Bit1 | Sharpness f0 frequency | 2.75MHz | 4MHz |
| | Bit0 | Sync. skew switch | OFF | sync skew detection on |

32)VCD1

| | Bit | Function | Status “ 0” | Status “ 1” |
|---|---|---|---|---|
| VCD1 | Bit7-4 | No use | | |
| | Bit3-2 | PIF detected output level trimming | 00: 1.05Vp-p 01:do not use 10: 2.2Vp-p 11:do not use | |
| | Bit1-0 | FM BPF | 00: internal BPF mode 01: not use10: not use 11: external BPF mode | |

33)CATVM
00=STD
01=IRC
02=HRC

34)LOGO address
280-28F logo display while switching on TV set
290-29F logo display while no signal

Use No.5 Service Remote press“ S-PVOC” key into LOGO address, then use No.1 Service Remote press“ ↑ /↓ ”key to select LOGO address and press “ ← /→ ” key to adjustment data.

| alphabet | A | B | C | D | E | F | G | H | I | J | K | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| data | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 4A | 4B | 4C | 4D |

| alphabet | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| data | 4E | 4F | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 5A |

| number | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Spacing | End |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| data | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 20 | 00 |

35) PVHH/PVHL/PUHH/PUHL
FS Tuner band set
For example: Some Tuner band specification is:
L：55.25-127.25 MHz(C2-B)/M:133.25-361.25 MHz(C - W+11)/H:367.25-801.25 MHz(W+13 –C69)
PVHH/PVHL
{[(127.25+133.25)÷2+45.75]x16-48} =2768(algorism), change to hex is 0AD0，so PVHH=0A ，PVHL=D0
PUHH/PUHL
{[(361.25+367.25)÷2+45.75]x16-48}=6512(algorism), change to hex is 1970，so PVHH=19 ，PVHL=70
PVHH=OA
PVHL=D0
PUHH=19
PUHL=70

# 6. Service and Design Data

21” UTI T008 BUS DATE

| | T008 | 21” | SAMSUNG |
|---|---|---|---|

| NO. | ITEM | DATA | REMARK | | ITEM | DATA | REMARK |
|---|---|---|---|---|---|---|---|
| 006 | RCUT | 20 | R CUT OFF | 069 | TREC | 40 | TREBLE CENTER VALUE |
| 007 | GCUT | 20 | G CUT OFF | 070 | BALC | 3F | BALANCE CENTER VALUE |
| 008 | BCUT | 20 | B CUT OFF | 071 | WOFC | 39 | WOFFER CENTER VALUE |
| 009 | GDRV | 40 | G DRIVE | 072 | BASX | 72 | BASS MAX VALUE |
| 010 | BDRV | 40 | B DRIVE | 073 | TREX | 72 | TREBLE CENTER VALUE |
| 011 | CNTX | 7F | SUB CONTRAST MAX | 074 | WOFX | 72 | WOFFER CENTER VALUE |
| 012 | BRTS | 00 | SUB BRIGHNESS | 075 | EFF1 | 40 | SOUND EFFECT1 |
| 013 | BRTC | 48 | SUB BRIGHT CENTER | 076 | EFF2 | 17 | SOUND EFFECT2 |
| 014 | COLC | 40 | SUB COLOR for NTSC | 077 | FLG0 | 44 | FLAGS |
| 015 | TNTC | 40 | SUB TINT CENTER | 078 | FLG1 | 20 | FLAGS |
| 016 | COLP | 00 | SUB COLOR for PAL | 079 | SVM | 10 | SVM |
| 017 | SCNT | 0A | SUB CONTRAST | 080 | VBLK | 00 | V BLK Start/Stop |
| 018 | CNTC | 58 | SUB CONTRAST CENTER | 081 | VCEN | 27 | V CENTERING |
| 019 | CNTN | 00 | SUB CONTRAST MIN | 082 | UCOM | 10 | Miciom Control |
| 020 | BRTX | 35 | SUB BRIGHT MAX | 083 | PYNX | 33 | NORMAL H.SYNC MAX |
| 021 | BRTN | 25 | SUB BRIGHT MIN | 084 | PYNN | 11 | NORMAL H.SYNC MIN |
| 022 | COLX | 35 | SUB COLOR MAX | 085 | PYXS | 22 | SEARCH H.SYNC MAX |
| 023 | COLN | 0B | SUB COLOR MIN | 086 | PYNS | 1E | SEARCH H.SYNC MIN |
| 024 | TNTX | 35 | SUB TINT MAX | 087 | AUSTP | 04 | AUDIO STEP |
| 025 | TNTN | 28 | SUB TINT MIN | 088 | STM | 07 | S Trap f0 For M |
| 026 | ST3 | 20 | TV—3.58 SHARP | 089 | SSM | 07 | S Select For M |
| 027 | SV3 | 25 | AV—3.58 SHARP | 090 | SYNC | 02 | SYNC |
| 028 | ST4 | 18 | TV—4.43 SHARP | 091 | SYBN | 44 | Sync detection setting for BB On |
| 029 | SV4 | 25 | AV—4.43 SHARP | 092 | SYBF | 44 | Sync detection setting for BB Off |
| 030 | SVD | 25 | DVD SHARP CENTER | 093 | SYSR | 44 | Sync detection setting for search/tuning |

| | | | |
|---|---|---|---|
| 031 | ASSH | 07 | ASYMMETRY SHARP |
| 032 | SHPX | 35 | SUB SHARP MAX |
| 033 | SHPN | 10 | SUB SHARP MIN |
| 034 | UVBK | 88 | U/V BLK ADJ |
| 035 | ABCL | E7 | ABL SYSTEM |
| 036 | DCBS | 17 | A part of Video data in detail |
| 037 | CLTM | B7 | The data when TV mode&SOUND SYS=M |
| 038 | CLVO | B7 | The data when YUV mode&SOUND SYS!=M |
| 039 | CLVD | 98 | The data when YUV mode&SOUND SYS=M |
| 040 | HPOS | OC | 60Hz HORIZONTAL PHASE |
| 041 | VPOS | 01 | 60Hz VERTICAL PHASE |
| 042 | HIT | 24 | 60Hz VERTICAL AMPLITUDE |
| 043 | HITZ | 09 | Zoom VERTICAL AMPLITUDE |
| 044 | HITW | 12 | Wide VERTICAL AMPLITUDE |
| 045 | VLIN | 12 | 60Hz VERTICAL-LINEARILTY |
| 046 | VSC | 0E | 60Hz VERTICAL-S CORRECTION |
| 047 | HBOW | 04 | H. BOW |
| 048 | HPAR | 04 | H. PAR |
| 049 | OV60 | 05 | OSD Vertical position for 60Hz |
| 050 | HPS | 00 | 50Hz HORIZONTAL PHASE |
| 051 | VPS | 00 | 50Hz VERTICAL PHASE |
| 052 | HITS | 00 | 50Hz VERTICAL AMPLITUDE |
| 053 | VLIS | 00 | 50Hz VERTICAL-LINEARILTY |
| 054 | VSS | 00 | 50Hz VERTICAL-S CORRECTION |
| 055 | OV50 | 00 | OSD Vertical position for 50Hz |
| 056 | RAGC | 25 | RF AGC |
| 057 | HAFC | 86 | AFC GAIN |
| 058 | NOIS | 0F | NOISE |
| 059 | NDTC | 1F | NOISE DET count (Weak -> Normal) |
| 060 | V1 | 09 | TV VOLUME 1% |
| 061 | V25 | 3D | TV VOLUME 25% |
| 062 | V50 | 57 | TV VOLUME 50% |
| **063** | **V100** | **75** | TV VOLUME 100% |
| 064 | AV50 | 5A | AV VOLUME 50% |
| **065** | **AV100** | **79** | **AV VOLUME 100%** |
| 066 | ATTV | 70 | To set the register of audio ATT while using ta1343n at TV or FM mode |
| 067 | ATAV | 70 | To set the register of audio ATT while using ta1343n at VIDEO or DVD mode |
| 068 | BASC | 40 | BASS CENTER VALUE |

| | | | |
|---|---|---|---|
| 094 | BBCT | 04 | Blue back hysteresis counter (BUS H sync detection) |
| 095 | VCD0 | 0E | VCD0 data |
| 096 | VCD1 | 08 | VCD1 data |
| 097 | CCOR | 43 | Set menu character's color |
| 098 | TCOR | 65 | Set menu top character's color |
| 099 | SCOR | 06 | Set menu selected character's color |
| 100 | ACOR | 88 | Set menu's background color |
| 101 | CALB | FD | Menu color option |
| 102 | CALC | 00 | SET CALENDAR BACKGROUND COLOR |
| 103 | CCD OSD | 30 | CCD OSD POSITION ADJUSTMENT |
| 104 | CCD OSDF | 59 | CCD OSD WIDTH |
| 105 | OSDF | 51 | OSD WIDTH |
| 106 | OSD | 10 | OSD POSITION ADJUSTMENT |
| 107 | CUSL | 40 | To set remote controller's custom code(low byte) |
| 108 | CUSH | BF | To set remote controller's custom code(high byte) |
| 109 | FSAD | C0 | FS tuner address |
| 110 | VPL | C5 | Be used to adjust the xray protect voltage |
| 111 | VADJ | 00 | Be used to adjust the base input voltage of eyecare |
| 112 | SADJ | 07 | Be used to adjust the check speed of eyecare |
| 113 | LOGH | 00 | LOGO HORIZONTAL POSITION |
| 114 | LOGV | 0F | LOGO VERTICAL POSITION |
| 115 | LOGO | 45 | LOGO select |
| 116 | ERAS | A3 | Be used to adjust the time of thermal resistance control |
| 117 | CATVM | 00 | CATV select |
| 118 | WTON | 7D | Turn on delay set |
| 119 | WOTF | EF | Turn off delay set |
| 120 | PVHH | 0A | Be used to set the start frequency of VHFH band of FS tuner(high byte) |
| 121 | PVHL | D0 | Be used to set the start frequency of VHFH band of FS tuner(low byte) |
| 122 | PUHH | 19 | Be used to set the start frequency of UHF band of FS tuner(high byte) |
| 123 | PUHL | D0 | Be used to set the start frequency of UHF band of FS tuner(low byte) |
| 124 | SOSP | 10 | Position OSD adjustment |
| 125 | HPSD | 03 | DVD HORIZONTAL PHASE |
| | | | |
| 001 | OTP | 17 | OPTION |
| 002 | OTP1 | 9D | OPTION1 |
| 003 | OTP2 | B2 | OPTION2 |
| 004 | OTP3 | 53 | OPTION3 |
| 005 | AOTP | 14 | AV OPTION |

# 7 . ICs Functional Description

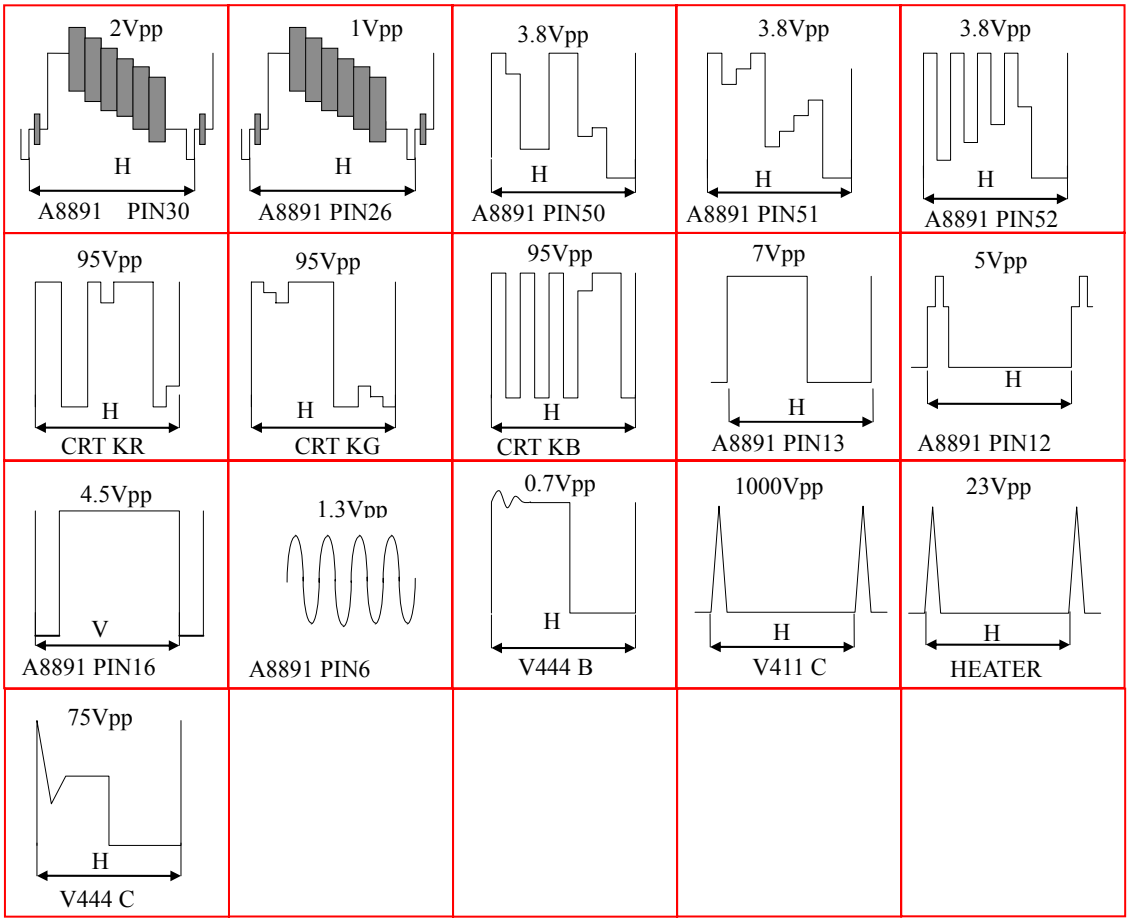
**TDA9302B** **Function : Vertical Output**

| PIN | PIN CONNECTIONS | PIN | PIN CONNECTIONS |
|---|---|---|---|
| 1 | Input | 5 | V. OUT |
| 2 | Vcc | 6 | Output Stage Vcc |
| 3 | PUMP UP OUT | 7 | NON. INV. IN |
| 4 | GND | | |

**TDA7267** **Function : Audio Output**

| PIN | PIN CONNECTIONS | PIN | PIN CONNECTIONS |
|---|---|---|---|
| 1 | NC | 7 | NC |
| 2 | NC | 8 | OUTPUT |
| 3 | SUR/MUTING | 9 | Vcc |
| 4 | INPUT(-) | 10 | NC |
| 5 | INPUT | 11 | NC |
| 6 | GND | | |

## 8 . Test Point Waveforms




## 9. IC Voltages

A8893CPNG-6RE1

| Pin | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Voltage | 2.7 | 0.1 | 5.1 | 0.0 | 5.1 | 2.3 | 2.1 | 0.0 | 5.1 | 0.0 | 0.0 | 1.1 | 2.1 | 5.5 | 4.1 | 4.9 | 7.9 | 0.0 | 1.9 |
| | | | | | | | | | | | | | | | | | | | |
| Pin | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 |
| Voltage | 1.9 | 2.0 | 3.9 | 2.4 | 2.5 | 0.7 | 2.7 | 4.4 | 3.1 | 3.2 | 3.0 | 3.2 | 3.9 | 2.9 | 2.2 | 2.4 | 5.0 | 2.1 | 3.1 |
| | | | | | | | | | | | | | | | | | | | |

| Pin | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 53 | 55 | 56 | 57 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pin | 3.0 | 0.0 | 2.0 | 2.0 | 2.0 | 1.9 | 2.8 | 2.3 | 5.0 | 2.0 | 3.3 | 2.6 | 2.6 | 2.6 | 0.0 | 0.0 | 5.1 | 0.0 | 5.1 |
| | | | | | | | | | | | | | | | | | | | |
| Pin | 58 | 59 | 60 | 61 | 62 | 63 | 64 | | | | | | | | | | | | |
| Voltage | 5.1 | 5.1 | 5.1 | 0.1 | 0.6 | 5.1 | 3.4 | | | | | | | | | | | | |

## STV9302B

| Pin | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Voltage | 3.0 | 26.5 | 1.5 | 0.0 | 13.2 | 26.8 | 3.0 |

## TDA7253(Mono)

| Pin | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Voltage | 0.0 | 0.0 | 11.5 | 1.7 | 1.7 | 0.0 | 0.0 | 8.9 | 19.6 | 0.0 | 0.0 |

## TDA7263(Stereo)

| Pin | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Voltage | | | | | | | | | | | |

AC supply : 110V 50/60Hz

# 10. Other

**1)Binary code change to hex**

| Binary code | Hex |
|---|---|
| 0 0 0 0 | 0 |
| 0 0 0 1 | 1 |
| 0 0 1 0 | 2 |
| 0 0 1 1 | 3 |
| 0 1 0 0 | 4 |
| 0 1 0 1 | 5 |
| 0 1 1 0 | 6 |
| 0 1 1 1 | 7 |
| 1 0 0 0 | 8 |
| 1 0 0 1 | 9 |
| 1 0 1 0 | A |
| 1 0 1 1 | B |
| 1 1 0 0 | C |
| 1 1 0 1 | D |
| 1 1 1 0 | E |
| 1 1 1 1 | F |

**2) Some skills of factory adjustment:**

a)How to use Service Remote enter service mode?

Pressing the “D MODE ON/OFF” key. Press “D MODE ON/OFF” key again to exit service mode.

b)How to use User remote enter Service mode?

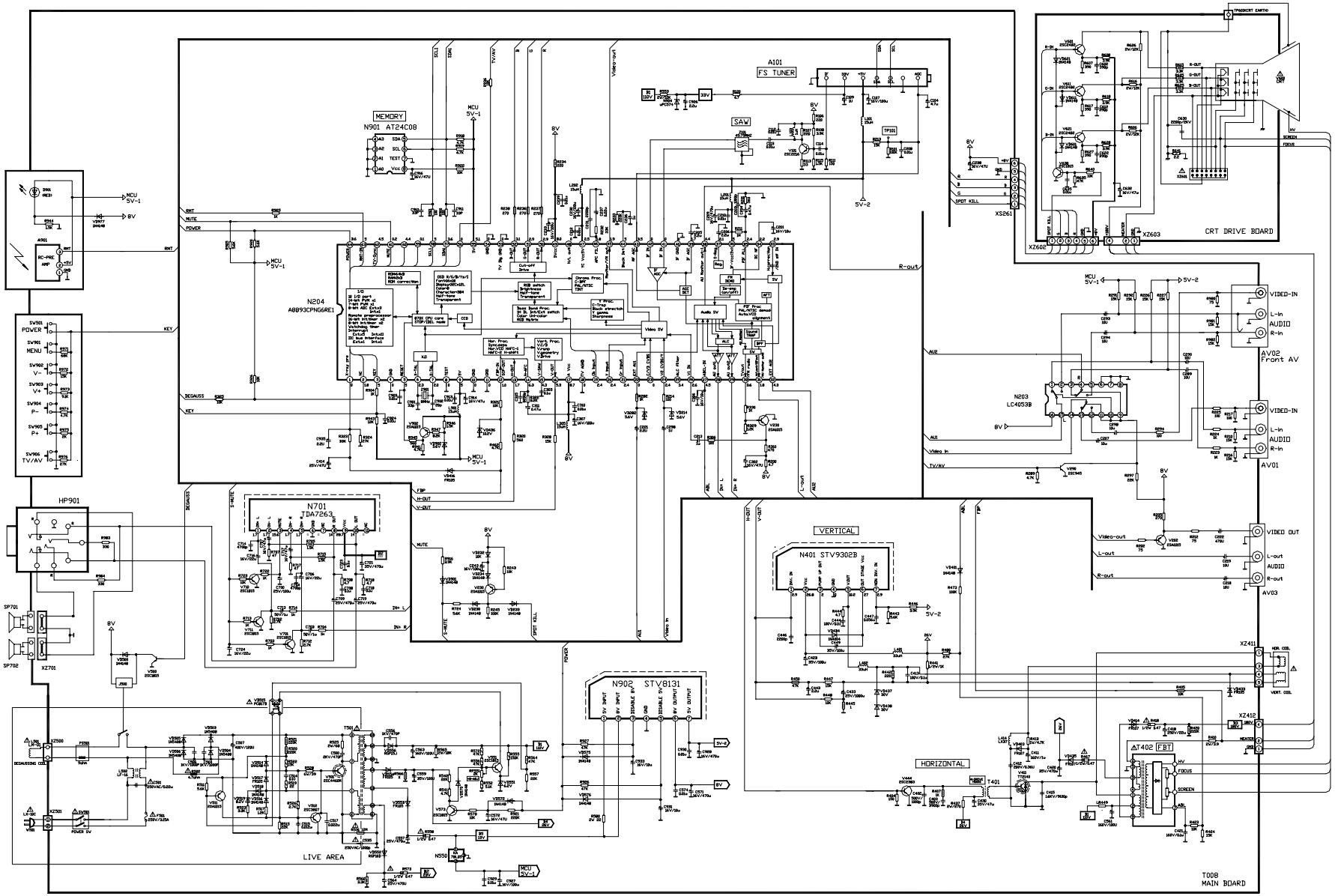
Press “MENU”→“ 6” →“ 4” →“ 8” →“ 3” key(within 6s).

c)How to unlock V-CHIP if you forgot password?

Press V-” key on the set to“ 00” keep then press MENU” key on the User Remote. Into V-CHIP menu, set V-CHIP password again.

**3)Keyboard input:**

| Key In | Key Pressed |
|---|---|
| 0.0-0.3V | POWER |
| 0.3-1.0V | Program+ |
| 1.0-1.7V | Program- |
| 1.7-2.4V | Volume+ |
| 2.4-3.1V | Volume- |
| 3.1-3.8V | TV/AV |
| 3.8-4.5V | Menu |


MEMORY
N901 AT24C08
A101
FS TUNER
SAW
N204
A8B93CPNG6RE1
N701
TDA7263
N401 STV9302B
VERTICAL
HORIZONTAL
N902 STV8131
N203
LC4053B
CRT DRIVE BOARD
XS261
XZ608
XZ603
AV02
Front AV
AV01
AV03
VIDEO-IN
L-in
AUDIO
R-in
VIDEO OUT
L-out
R-out
HP901
SP701
SP702
XZ701
XZ411
XZ412
T402 FBT
T401
LIVE AREA
T008
MAIN BOARD
MCU
5V-1
5V-2
8V
MUTE
POWER
KEY
DEGAUSS
SPOT KILL
R-out
L-out
Video-out
Video In
TV/AV
AUX